

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number
WO 2005/016857 A2

- (51) International Patent Classification⁷: **C07C 7/00**
- (21) International Application Number:
PCT/EP2004/009216
- (22) International Filing Date: 17 August 2004 (17.08.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
PCT/EP03/09133 18 August 2003 (18.08.2003) EP
- (71) Applicant (for all designated States except US): **VRIJE UNIVERSITEIT BRUSSEL** [BE/BE]; Pleinlaan 2, B-1050 Brussel (BE).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **DENAYER, Joeri** [BE/BE]; Sint Laureinsstraat 6, B-1600 Sint-Laureins-Berchem (BE). **OCAKOGLU, Refik** [TR/BE]; A. Huysmanslaan 189, B-1050 Brussel (BE). **BARON, Gino** [BE/BE]; Bleuckeveldlaan 34, B-3080 Tervuren (BE).
- (74) Agent: **BRANTS, Johan, Philippe, Emi**; De Clercq Brants & Partners, E. Gevaertdreef 10 a, B-9830 Sint-Martens-Latem (BE).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Declaration under Rule 4.17:**
— of inventorship (Rule 4.17(iv)) for US only
- Published:**
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR SEPARATING HYDROCARBONS AND USE OF A ZEOLITE THEREFOR

(57) Abstract: The present invention relates to a method for separating a mixture of hydrocarbons into fractions enriched in linear, mono-branched, or multi-branched hydrocarbons. In particular, the present invention relates to a method of separating mono-branched alkanes from a mixture of alkanes containing multi-branched; mono-branched and linear alkanes, by selectively adsorbing said mono-branched alkanes on a zeolitic adsorbent. The zeolitic adsorbent MCM-22 is particularly suitable for carrying out the method according to the invention.

WO 2005/016857 A2

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number
WO 2005/016857 A3

(51) International Patent Classification⁷: **C07C 7/13,**
B01J 29/40

(21) International Application Number:
PCT/EP2004/009216

(22) International Filing Date: 17 August 2004 (17.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PCT/EP03/09133 18 August 2003 (18.08.2003) EP

(71) Applicant (for all designated States except US): **VRUJE**
UNIVERSITEIT BRUSSEL [BE/BE]; Pleinlaan 2,
B-1050 Brussel (BE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DENAYER,**
Joeri [BE/BE]; Sint Laureinsstraat 6, B-1600 Sint-Lau-
reins-Berchem (BE). **OCAKOGLU, Refik** [TR/BE]; A.
Huysmanslaan 189, B-1050 Brussel (BE). **BARON, Gino**
[BE/BE]; Bleuckeveldlaan 34, B-3080 Tervuren (BE).

(74) Agent: **BRANTS, Johan, Philippe, Emi;** De Clercq
Brants & Partners, E. Gevaertdreef 10 a, B-9830
Sint-Martens-Latem (BE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report
— before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:

7 April 2005

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR SEPARATING HYDROCARBONS AND USE OF A ZEOLITE THEREFOR

(57) Abstract: The present invention relates to a method for separating a mixture of hydrocarbons into fractions enriched in lin-
ear, mono-branched, or multi-branched hydrocarbons. In particular, the present invention relates to a method of separating mono-
branched alkanes from a mixture of alkanes containing multi-branched; mono-branched and linear alkanes, by selectively adsorbing
said mono-branched alkanes on a zeolitic adsorbent. The zeolitic adsorbent MCM-22 is particularly suitable for carrying out the
method according to the invention.

WO 2005/016857 A3

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number
WO 2005/016857 A3

(51) International Patent Classification⁷: **C07C 7/13**,
B01J 29/40

(21) International Application Number:
PCT/EP2004/009216

(22) International Filing Date: 17 August 2004 (17.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PCT/EP03/09133 18 August 2003 (18.08.2003) EP

(71) Applicant (for all designated States except US): **VRIJE
UNIVERSITEIT BRUSSEL** [BE/BE]; Pleinlaan 2,
B-1050 Brussel (BE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DENAYER,**
Joeri [BE/BE]; Sint Laureinsstraat 6, B-1600 Sint-Lau-
reins-Berchem (BE). **OCAKOGLU, Refik** [TR/BE]; A.
Huysmanslaan 189, B-1050 Brussel (BE). **BARON, Gino**
[BE/BE]; Bleuckeveldlaan 34, B-3080 Tervuren (BE).

(74) Agent: **BRANTS, Johan, Philippe, Emi**; De Clercq
Brants & Partners, E. Gevaertdreef 10 a, B-9830
Sint-Martens-Latem (BE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report
— with amended claims

(88) Date of publication of the international search report:
7 April 2005

Date of publication of the amended claims: 21 July 2005

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR SEPARATING HYDROCARBONS AND USE OF A ZEOLITE THEREFOR

(57) Abstract: The present invention relates to a method for separating a mixture of hydrocarbons into fractions enriched in lin-
ear, mono-branched, or multi-branched hydrocarbons. In particular, the present invention relates to a method of separating mono-
branched alkanes from a mixture of alkanes containing multi-branched; mono-branched and linear alkanes, by selectively adsorbing
said mono-branched alkanes on a zeolitic adsorbent. The zeolitic adsorbent MCM-22 is particularly suitable for carrying out the
method according to the invention.



WO 2005/016857 A3